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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/819,728	03/29/2001	Katsuhito Fujimoto	826.1723	4350

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EXAMINER

BALI, VIKKRAM

ART UNIT PAPER NUMBER

2623

DATE MAILED: 07/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/819,728

Applicant(s)

FUJIMOTO ET AL.

Examiner

Vikkram Bali

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 13, 14, 16-19, 22, 23 and 25-40 is/are rejected.
- 7) ☒ Claim(s) 9-12, 15, 20 and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                              |                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2 and 4</u> . | 6) <input type="checkbox"/> Other: ____                                                |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-8, 13-14, 16-19, 22-23 and 25-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nako (US 5940544).

With respect to claim 7 (as the exemplary claim, Nako discloses the distortion correction method in that an outline extraction device extracting an outline of a piece of

Art Unit: 2623

rectangular paper from the input image, (see figure 1, 9 as picture input, edge detection 10); and a distortion correction device to correct the image as the output image, (see figure 1, 15 and 17 as distortion correction and the picture output) as claimed.

However, he fails to disclose, a curved surface estimation device for estimating a 3D curved surface of the paper, as claimed. But, as disclose in the col. 2, lines 14-16, wherein, a height detection means detects the height of the document i.e. "the curved surface of the paper" a document, and "the 3D of the paper" i.e. the height of the document and as seen from the figure 2, 3 is the book i.e. the document is the "paper" bound book. Therefore, it would have been obvious to one ordinary skilled in the art at the time of invention to simply detail the height of the document as disclose by the Nako as the 3D model of the paper and can be use in the distortion correction of the input image, as detailed in the disclose of the Nako.

With respect to claim 8, he further discloses the white and black image, (the book has the white and black writing i.e. a white paper and black writing) as claimed.

With respect to claims 13 and 14, he further discloses, the sunken center folded and raised center folded 3D model of the paper, (see figure 2, numerical 1 the book has a sunken fold and a raised fold and the height is calculated for the entire page on either side of the book i.e. both sunken fold and the raised fold is model or calculated) as claimed.

Claim 16 is rejected for the same reasons as set forth in the rejection for claim 14, because claim 16 is claiming subject matter as claim 14.

Art Unit: 2623

With respect to claim 17, it is well known in the art to use a coons interpolation in order to model a 3D outline of the curved surface. Therefore, one ordinary skilled in the art at the time of invention can simply consider using one of the conventionally use method of curved surface modeling i.e. coons interpolation.

With respect to claim 18, he further discloses outline of 3D discrete sample points of the 3D outline model and a value corresponding to height of the each of the 3D points, (see figure 11A, 11C, the details that the discrete sampling and height determining at the points) as claimed.

With respect to claim 19, he further discloses the parameter as the 3D model, (see figure 11A, the height is the parameter of the 3D model) as claimed.

Claim 22 is rejected for the same reasons as set forth in the rejection for claim 19, because claim 22 is claiming subject matter as claim 19.

With respect to claim 23, he further discloses outline by perspective conversion, (see figure 11A and the col. 13, lines 48-57, the height is the read as the perspective of the paper which is use to model 3D of the paper) as claimed.

Claims 1-6 and 25-40 are rejected for the reasons as set forth in the rejection of claim 7, because claims 1-6 and 25-40 are claiming subject matter as claimed in claim 7.

4. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nako (US 5940544) in view of Non linear shape restoration for document images by Weng.

With respect to claim 24, Nako discloses the invention substantially as describe and as disclose in claim 7. However, he fails to disclose the calculating the location using the outline for the top/lower and the left/right lengths, as claimed. Weng in non-linear shape restoration teaches the calculating the location using the outline for the top/lower and the left/right lengths, (see col. 2 of page 569 and section II.2 col. 1 of page 570) as claimed. The references are combinable as they are analogous because they are solving similar problem of distortion correction for the over-head scanning of the documents. The procedure of the Weng can be place into the distortion correction device of the Nako, as the device is a computer processor and can be programmed to do any different instructions.

***Allowable Subject Matter***

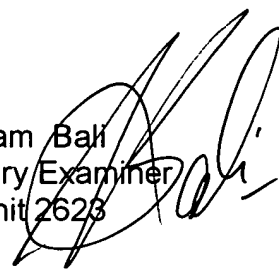
5. Claims 9-12, 15 and 20-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vikkram Bali whose telephone number is 703.305.4510. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703.308.6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Vikkram Bali  
Primary Examiner  
Art Unit 2623



vb  
June 24, 2004